

ABSTRACT

The object of the Electrical Density Gauge (EDG) invention is to provide a low cost, portable, non-nuclear, and rugged field-use device that measures dry density in soils that have been constructed for use as road-beds and building foundations. This data is used to ensure the quality control of the constructed foundation. The electrical properties of soil are measured at a radio frequency using probes driven into the soil. To calibrate EDG, certain algorithms of these electrical properties are related to physically measured wet densities and unit weights of water for a plurality of calibration test spots. Correlation regressions are found, that are used to convert values of the electrical properties measured at unknown field test spots into values of dry density.